

A NEW SPECIES OF *ERNOBIUS* (COLEOPTERA: ANOBIIDAE)  
INJURIOUS TO SPRUCE

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*Abstract.*—A new species, *Ernobius bicolor*, is described that is injurious to black spruce, *Picea mariana* (Mill.) B.S.P., in Newfoundland. The beetle feeds within old cones that remain attached to trees and thereby interferes with natural reestablishment of black spruce stands after harvest or destruction by fire. Characters are given that distinguish the beetle from other, similar species. A full figure drawing of the male is provided along with illustrations of the antennae of both sexes, the male genitalia, and for comparison, the male genitalia of *Ernobius mollis* (L.).

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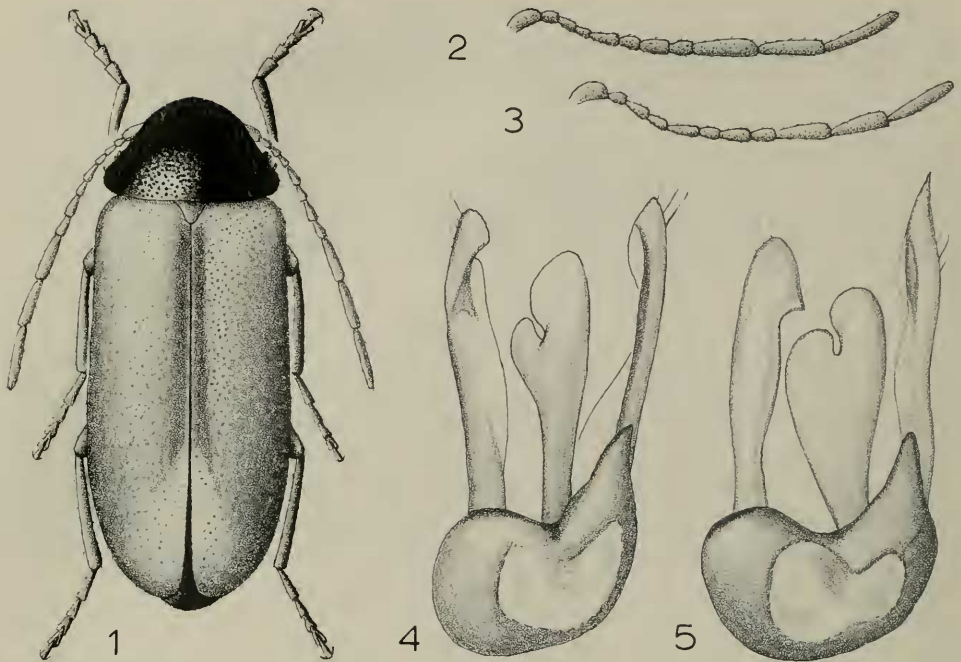
The Canadian Forestry Service, through Donald E. Bright of the Biosystematics Research Institute in Ottawa, requested the identification of a species of *Ernobius* that damages cones of black spruce (*Picea mariana* (Mill.) B.S.P.) in Newfoundland. Examination of this beetle showed it to be a new species distinct from all other Nearctic and Palearctic species of *Ernobius*. The new species is herein named and described in order to provide a name for those who are working on its biology and control, and to allow its recognition.

The beetle causes significant damage by feeding within old cones that remain attached to spruce trees. By destroying seeds retained in the cones it interferes with natural reestablishment of black spruce stands following harvest or destruction by fire. Up to 50% of field-collected cones have been found to be damaged by the beetle, which also destroys many seeds in cones stored for seed extraction. The beetle evidently occurs throughout the island of Newfoundland, for evidence of damage was found in cones from all 31 locations where collections were made; it is not yet known from other areas.

*Ernobius bicolor* White, NEW SPECIES

Figs. 1-4

*Description.*—*General:* Body elongate, 2.4-2.6 × as long as wide; pronotum nearly as wide as elytra at base. Color of male as follows: head and pronotum exclusively to primarily black, ventral surface primarily black, often with posterior margin of abdominal segments orangish to reddish brown; antenna, legs, and elytra primarily orangish to reddish brown, tibiae noticeably darker than remainder of legs. Elytra often darkened along lateral margin, sometimes darkened along median suture; elytral apex often lighter than remainder of elytra, infrequently with elytra irregularly dark brown. Color of female as follows: orangish



Figs. 1-5. 1-4, *Ernobius bicolor*. 5, *E. mollis*. 1, Male, dorsal view. 2, Male antenna. 3, Female antenna. 4, 5, Male genitalia.

to reddish brown nearly throughout, but often elytral apex lighter than remainder of elytra, various parts of body (especially pronotum and elytra) sometimes clouded with brown. Pubescence yellowish, with a weakly orange hue, moderate in length and density, not at all obscuring surface, appressed. Dorsum punctate, punctures moderate in density, margins of punctures on pronotum distinctly raised, margins of punctures on elytra feebly raised. Pronotum and elytra with surfaces moderately shiny.

*Head:* Eyes of male separated by  $1.7-2.0\times$  vertical diameter of an eye, eyes of female smaller, separated by  $2.0-2.4\times$  vertical diameter of an eye. Antenna 11-segmented, that of male about  $\frac{2}{3}$  as long as body, that of female about  $\frac{1}{2}$  as long as body; basal 8 segments of both sexes with first segment longest, 5th and 7th segments long and similar in length, 2nd, 3rd, 6th, and 8th segments shorter and subequal in length, 4th segment shortest, or among the shortest; male with last 3 segments longer than all preceding united, 9th segment about  $4\times$  as long as wide; female with last 3 segments shorter than all preceding united, 9th segment about  $3\times$  as long as wide. Last segment of labial palpus triangular, longer than wide; last segment of maxillary palpus subfusiform, about  $2\times$  as long as wide.

*Dorsal surface:* Pronotum with a complete, sharp, explanate lateral margin, in dorsal view margin arcuate and widest near base; pronotal surface weakly undulate. Elytral surface feebly depressed basally near suture.

*Ventral surface:* Finely granulate punctate. Sixth abdominal sternite of male deeply notched; 6th abdominal sternite of female shallowly to deeply notched.

*Length:* 3.7-5.4 mm.

Types.—Described from 45 individuals (25 ♂, 20 ♀) from Gambo, Newfoundland, reared from *Picea mariana* cones during July of 1980 by H. O. Schooley. The specimens bear handwritten numbers 1 through 45. Male holotype (with number 10), allotype, and 28 paratypes (14 ♂, 14 ♀) in Canadian National Collection, Ottawa (CNC); 15 paratypes (10 ♂, 5 ♀) in National Museum of Natural History, Washington, D.C. (USNM).

Remarks.—The specific name, *bicolor*, refers to the body color of the male.

The sexes of *bicolor* are readily distinguished by color characters. Most of the males have the head, pronotum, and ventral surface black with just the apices of the abdominal segments orangish to reddish brown. Some males have the head and pronotum partly, and also the ventral surface, orangish to reddish brown. The elytra are orangish to reddish brown and sometimes also the suture and sides are dark brown. The female is nearly always orangish to reddish brown throughout, but sometimes the pronotum and elytra are clouded with dark brown.

In the key to species of *Ernobius* (Fall, 1905: 140), *bicolor* keys to *mollis* (L.). It clearly is not that species, for both sexes of *mollis* are unicolorous, and the male genitalia of the two species differ (Figs. 4, 5).

Brown (1932: 9) described *Ernobius schedli* from Bascotasing, Ontario, and mentioned that females of the species key to *E. mollis* in Fall's key. I have examined the male holotype (in CNC) and five paratypes (4 ♂, 1 ♀; 3 in CNC, 2 in USNM) of *E. schedli* Brown and it is clearly different from *E. bicolor*. The male of *schedli* has the last 3 antennal segments about one-third longer than all preceding segments united, and the female has the last 3 antennal segments a little longer than all preceding segments united. The male of *bicolor* has the last 3 antennal segments a little longer than all preceding segments united. Also, *schedli* (both sexes) has antennal segments 5–8 subequal in length, while *bicolor* has antennal segments 5 and 7 subequal and clearly longer than 6 and 8. There are similarities in the color differences between sexes of the two species, but this color dimorphism, with the male being darker than the female, is not as strongly developed in *schedli* as in *bicolor*.

Comparison of the male genitalia of *bicolor* with the genitalic illustrations by Johnson (1975) in a study of the Palearctic species of *Ernobius* shows that the greatest similarities are to be found with those of *explanatus* (Mannerheim), a species that occurs in Finland, Norway, Sweden, and northwestern Russia. The external morphology of *explanatus* suggests that it is closely related to *bicolor*; in fact, the similarities in many characters are greater than are those of *mollis*. Unlike *bicolor*, both sexes of *explanatus* are nearly uniformly dark reddish brown throughout, and, of antennal segments 5–8, 5 is the longest, 7 is clearly shorter than 5 and a little longer than 6 and 8. In *bicolor*, of segments 5–8, 5 and 7 are the longest and subequal in length, while 6 and 8 are clearly shorter and subequal in length.

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#### LITERATURE CITED

- Brown, W. J. 1932. New species of Coleoptera III. Can. Entomol. 64(1): 3–12.  
Fall, H. C. 1905. Revision of the Ptinidae of boreal America. Trans. Am. Entomol. Soc. 31: 97–296.  
Johnson, C. 1975. A review of the palearctic species of the genus *Ernobius* Thomson. Entomol. Bl. 71(2): 65–93.